

# **Audit**



# **Report**

OFFICE OF THE INSPECTOR GENERAL

**DEFENSE BASE REALIGNMENT AND CLOSURE  
BUDGET DATA FOR THE NAVAL SURFACE WARFARE  
CENTER, INDIAN HEAD, MARYLAND**

Report No. 95-285

August 4, 1995

**Department of Defense**

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### **Acronyms**

A-E	Architectural and Engineering
BRAC	Base Realignment and Closure
CHESDIV	Chesapeake Division
CNO	Chief of Naval Operations
COBRA	Cost of Base Realignment Actions
EFD	Engineering Field Division
MILCON	Military Construction
NAVCOMPT	Comptroller of the Navy
NAVFAC	Naval Facilities Engineering Command
NSWC	Naval Surface Warfare Center
NTG	Net-to-Gross
RBFR	Relocation Basic Facility Requirements



**INSPECTOR GENERAL**  
**DEPARTMENT OF DEFENSE**  
**400 ARMY NAVY DRIVE**  
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August 4, 1995

**MEMORANDUM FOR UNDER SECRETARY OF DEFENSE (COMPTROLLER)**  
**ASSISTANT SECRETARY OF THE NAVY (FINANCIAL**  
**MANAGEMENT AND COMPTROLLER)**

**SUBJECT: Audit Report on Defense Base Realignment and Closure Budget Data for**  
**the Naval Surface Warfare Center, Indian Head, Maryland (Report**  
**No. 95-285)**

We are providing this audit report for management review and comment. We considered management comments on the draft of this report in preparing the final report. This report is one in a series of reports about FY 1996 Defense base realignment and closure military construction costs.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. As a result of additional audit work and management comments, we revised Recommendations 1. and 3. to clarify our intention. Therefore, we request that the Under Secretary of Defense (Comptroller) and the Navy provide additional comments on Recommendations 1. and 3. and potential monetary benefits by September 5, 1995.

The courtesies extended to the audit staff are appreciated. If you have questions on this audit, please contact Mr. Raymond Spencer, Audit Program Director, at (703) 604-9071 (DSN 664-9071) or Mr. David Vincent, Audit Project Manager, at (703) 604-9058 (DSN 664-9058). See Appendix H for the report distribution. The audit team members are listed inside the back cover.

*David K. Steensma*

David K. Steensma  
Deputy Assistant Inspector General  
for Auditing

## **Office of the Inspector General, DoD**

**Report No. 95-285**  
(Project No. 5CG-5017.23)

**August 4, 1995**

### **Defense Base Realignment and Closure Budget Data for the Naval Surface Warfare Center, Indian Head, Maryland**

#### **Executive Summary**

**Introduction.** Public Law 102-190, "National Defense Authorization Act for Fiscal Years 1992 and 1993," December 5, 1991, directs the Secretary of Defense to ensure that the amount of the authorization that DoD requested for each military construction project associated with Defense base realignment and closure does not exceed the original estimated cost provided to the Commission on Defense Base Realignment and Closure (the Commission). If requested budget amounts exceed the original project cost estimates provided to the Commission, the Secretary of Defense is required to explain to Congress the reasons for the differences. The Inspector General, DoD, is required to review each base realignment and closure military construction project for which a significant difference exists from the original cost estimate and to provide the results of the review to the congressional Defense committees. This report is one in a series of reports about FY 1996 Defense base realignment and closure military construction costs.

**Audit Objectives.** The overall audit objective was to determine the accuracy of Defense base realignment and closure military construction budget data. This report provides the results of the audit of one project, valued at \$10.3 million, for the realignment of explosive research functions, personnel, and equipment at Naval Surface Warfare Center, White Oak, Maryland, to Naval Surface Warfare Center, Indian Head, Maryland.

**Audit Results.** Navy planning officials did not adequately justify or document the requirements for the base realignment and closure military construction project P-146T, "Explosive Test Facility Complex," associated with the realignment of explosive research functions, personnel, and equipment at Naval Surface Warfare Center, White Oak, Maryland, to Naval Surface Warfare Center, Indian Head, Maryland. Specifically, estimated costs for the project, valued at approximately \$9.4 million, included work outside the scope of the valid BRAC MILCON requirements and were, therefore, questioned. In addition, we identified overstated requirements, valued at approximately \$0.9 million. As a result, estimated costs of \$10.3 million could be put to better use. See Part I for a discussion of the finding. See Appendix F for a summary of the potential benefits of the audit. The review of the management control program will be discussed in a summary report on base realignment and closure military construction budget data.

**Summary of Recommendations.** We recommend that the Under Secretary of Defense (Comptroller) suspend funding by \$9.4 million for project P-146T and delete funding for this project by \$0.9 million. Further, we recommend that the Navy enforce existing management control procedures requiring that DD Forms 1391 be accurate, reliable, and derived from verifiable data; suspend project P-146T pending recalculation of costs associated with upgrading explosive limits; reduce funding by \$0.9 million; revise DD Form 1391 to reflect the results of analysis and the reduced funding; update DD Form 1391 with the correct category code for project P-146T; and conduct an economic analysis of administrative space.

**Management Comments.** The Under Secretary of Defense (Comptroller) concurred with the recommendations to suspend and reduce funding for the base realignment and military construction project. The Navy concurred with the recommendations to enforce existing management controls requiring accurate, reliable, and verifiable DD Forms 1391; updating DD Form 1391 with the correct category code; and conducting an economic analysis of administrative space. However, the Navy nonconcurred with the recommendation to reduce project funding. A summary of management comments is at the end of the finding in Part II. The complete text of management comments is in Part III.

**Audit Response.** As a result of additional audit work and management comments, we revised two recommendations. Therefore, we request that the Under Secretary of Defense (Comptroller) and the Navy provide final comments on the unresolved recommendations by September 5, 1995.

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## **Part I - Audit Results**

### Audit Background

The Inspector General, DoD, is performing various audits of the Defense base realignment and closure (BRAC) process. This report is one in a series of reports about FY 1996 BRAC military construction (MILCON) costs. For additional information on the BRAC process and the overall scope of the audit of BRAC MILCON costs, see Appendix C.

### Audit Objectives

The overall audit objective was to determine the accuracy of Defense BRAC MILCON budget data. The specific objectives were to determine whether the proposed projects were valid BRAC requirements, whether the decision for MILCON was supported with required documentation including an economic analysis, and whether the economic analysis considered existing facilities.

This report provides the results of the audit of one project, valued at \$10.3 million, for the realignment of explosive research functions, personnel, and equipment at Naval Surface Warfare Center (NSWC), White Oak, Maryland, to NSWC, Indian Head, Maryland. See Appendix A for a discussion of the scope and methodology and Appendix B for a summary of prior coverage related to the audit objectives. The management control program will be discussed in a summary report on BRAC MILCON budget data.



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## **Base Realignment and Closure Military Construction Requirements and Costs**

Navy planning officials did not adequately justify or document the BRAC MILCON requirements for project P-146T, "Explosive Test Facility Complex," relating to the realignment of explosive research functions, personnel, and equipment at NSWC, White Oak, Maryland, to NSWC, Indian Head, Maryland. Specifically, estimated costs for the project, valued at approximately \$9.4 million, included work outside the scope of the valid BRAC MILCON requirements and were, therefore, questioned. In addition, we identified overstated requirements, valued at approximately \$0.9 million. These conditions occurred because Navy planning officials did not follow established procedures for developing, documenting, and certifying BRAC MILCON requirements. As a result, estimated costs of \$10.3 million could be put to better use.

### **Guidance for Planning and Documenting Requirements**

Public Law 101-510, "Defense Base Closure and Realignment Act of 1990," November 5, 1990, establishes funds to be used for the closure and realignment of military units and support facilities. Section 2905 of Public Law 101-510 states that "funds from the Department of Defense Base Closure Account should be used only for the actions that may be necessary to close or realign any military installation, including the construction of replacement facilities."

Naval Facilities Engineering Command (NAVFAC) Instruction 11010.44E, "Shore Facilities Planning Manual," October 1, 1990, outlines policy on the responsibilities and procedures for the facilities' planning process.

NAVFAC Publication P-80, "Facility Planning Criteria for Navy and Marine Corps Shore Installations," October 1982, provides general guidance for the construction of research, development, test, and evaluation facilities.

### **Analysis of Explosive Test Facility Complex Documentation**

**Original Project Scope and Budget Estimate.** Facility planners are responsible for providing a detailed justification of requirements, including the functions to be accommodated, space needed for each function, number and organizational status of personnel, support space requirements, and an industrial engineering analysis of the operations. NSWC planning officials submitted DD Form 1391, dated June 30, 1993, "FY 1994 Military Construction Data," for budget approval of FY 1994 BRAC MILCON project P-146T, "Explosive

## Base Realignment and Closure Military Construction Requirements and Costs

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Test Facility Complex,<sup>1</sup> at an estimated cost of \$10.9 million. The Comptroller of the Navy (NAVCOMPT) subsequently reprogrammed FY 1994 BRAC MILCON project P-146T to FY 1995 and then to FY 1996. A summary of DD Form 1391 requirements are in Appendix D.

The original project scope was estimated at 19,350 square feet, which consisted of:

- 5,650 square foot thermal studies and initiation systems laboratory with a 50-pound and a 5-pound bomb-proof chamber<sup>2</sup>;
- 1,700 square foot shock physics and fragment impact laboratory with two 5-pound bomb-proof chambers;
- 800 square foot detonation physics laboratory with a 5-pound bomb-proof chamber;
- 1,400 square foot explosives preparation building;
- 5,500 square foot office building/tech laboratory/change house;
- 3,000 square feet of enclosed ramps;
- 900 square foot mechanical/electrical shop; and
- 400 square foot magazine for storage of explosives.

We determined that NSWC planning officials did not prepare or retain the documentation, required by NAVFAC Instruction 11010.44E, to justify the original project scope or the original \$10.9 million budget estimate. The documentation reviewed did not adequately support the requirements or rationale supporting assumptions used in preparing the budget estimate. According to NSWC planning officials, the lack of documentation was the result of the short timeframe the BRAC process dictated. As a result, requirements valued at \$10.9 million were not adequately supported or documented.

**Project Revision.** Before the BRAC budget submission, NAVFAC revised the original DD Form 1391, dated June 30, 1993, as a result of changes in project requirements due to wetlands mitigation that precluded construction at the site originally selected. The revised DD Form 1391, dated April 25, 1994, that was submitted for inclusion in the BRAC budget showed project costs at \$10.3 million and gross space requirements at 16,350 square feet, because of the deletion of 3,000 square feet of ramp area. After the April 25, 1994,

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<sup>1</sup>The primary purpose of this project is to construct an explosive test facility to perform instrumented experiments on the detonation characteristics of high-explosive materials.

<sup>2</sup>Bomb-proof chambers are cubicles constructed of thick reinforced walls for the scientific study of detonations.

## Base Realignment and Closure Military Construction Requirements and Costs

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DD Form 1391 was forwarded and included in the BRAC budget submission, NAVFAC awarded an architectural and engineering (A-E) design contract for the Explosive Test Facility Complex in May 1994.

**A-E Design Scope.** The A-E contractor calculated construction costs for the Explosive Test Facility Complex at \$10.3 million and gross space requirements at 24,730 square feet that consisted of:

- 5,830 square foot laboratory with a 50-pound bomb-proof chamber;
- 4,790 square foot gun facility laboratory with a 5-pound bomb-proof chamber;
- 2,450 square foot detonation physics laboratory with a 10-pound bomb-proof chamber;
- 2,450 square foot shock physics laboratory with a 10-pound bomb-proof chamber;
- 1,570 square foot thermal studies laboratory with a 10-pound bomb-proof chamber; and
- 7,640 square foot administration and support building.

The A-E contractor's calculation of construction costs and space requirements contained extensive changes in project requirements compared with the original DD Form 1391. While space requirements for the Explosive Test Facility Complex increased by 8,380 square feet (24,730 square feet minus 16,350 square feet), or 51 percent (8,380 divided by 16,350), estimated costs for the Explosive Test Facility Complex *did not increase* proportionately, but remained constant at \$10.3 million (emphasis added).

**Chesapeake Division Certification.** Naval Facilities Engineering Command, Engineering Field Activity, Chesapeake Division (CHESDIV), certified the A-E contractor's project costs, scope, and readiness to complete the design phase of construction. However, neither CHESDIV nor NAVFAC could provide the required and completed cost certification study. CHESDIV subsequently revised the DD Form 1391 to reflect the A-E contractor's calculation of construction costs and space requirements at \$10.3 million and 24,730 square feet. However, Navy and DoD officials have not approved the expanded requirements reflected in the revised DD Form 1391, dated August 25, 1994, because NAVFAC had not submitted the revised DD Form 1391 to NAVCOMPT and DoD for approval.

NAVFAC Instruction 11010.49G, "Scope Change, Cost Variation and Reprogramming of a Military Construction Project; limitations on," September 23, 1986, states that:

The official CNO [Chief of Naval Operations] approved scope of a project is established when CNO authorizes initial design to begin on the project . . . . No changes to this scope are permitted without prior CNO approval. Should a scope change be necessary, a request should

## Base Realignment and Closure Military Construction Requirements and Costs

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be submitted to NAVFAC Code 21 with the reason for the change accompanied by a revised DD Form 1391. NAVFAC Code 21 will obtain CNO approval/disapproval of the scope change.

NAVFAC Instruction 11010.44E, Section 3.17G, states that major claimants (approving authorities) are to ". . . ensure completeness and currency of project documentation throughout the planning and programming cycle." Further, Section 4.21 of the instruction states that "justification should include documentation of the step-by-step process by which the project requirements and budget estimate were developed. The justification should stand alone when reviewed by others." Additionally, Section 11.1 of the instruction states that "The Engineering Field Division (EFD) will review Facility Studies and DD Forms 1391 for projects supported by Major claimants for budget years. Activities will ensure sufficient project detail is submitted for the EFD to certify budget year projects as ready for design. The EFDs will certify each project has been evaluated and sufficient data has been collected to allow design to proceed."

CHESDIV neither reviewed project planning documentation nor certified the \$10.9 million budget estimate before allowing the project to proceed to design. CHESDIV officials said that they neither performed a detailed review of the project nor maintained the supporting documentation. CHESDIV officials cited time constraints as the reason for the lack of adequate supporting documentation and certification. However, as discussed previously, this project was initially programmed as a FY 1994 BRAC MILCON project and was subsequently reprogrammed to FY 1996 as a result of NAVCOMPT reprogramming actions. Therefore, the Navy's assertions that time constraints contributed to the lack of project planning documentation and certification were not valid. As a result, requirements valued at \$10.3 million were not justified because CHESDIV did not have adequate supporting documentation.

### Requirements Determination.

**Criteria.** Public Law 101-510, "Defense Base Closure and Realignment Act of 1990," November 5, 1990, states that BRAC MILCON funds are to be used for facility construction or renovation to accommodate realignment actions. Further, the Commander, NAVFAC, limited the guidance by stating that Navy BRAC MILCON project requirements are limited to the lesser of the realigning organization's facility requirements or the space occupied at the losing installation. In addition, NAVFAC Instruction 11010.44E states that facility requirements must be accurate and justified and that proposals should not exceed requirements.

**Basic Facility Requirements.** As a result of our draft report recommendations, the Navy awarded a separate A-E contract to determine the basic facility

requirements<sup>3</sup> related to transferring NSWC, White Oak, explosive test functions to the Indian Head site. The A-E contractor prepared the "Explosive Test Facility Relocation Basic Facility Requirements" (the RBFR), dated April 1995. Subsequently, the Navy provided us with the RBFR in response to the draft report's recommendations. We determined that the Navy's RBFR did not fully justify project P-146T BRAC MILCON requirements. Specifically, the RBFR contained erroneous net-to-gross (NTG) calculations that adversely affected its conclusions. Details of the erroneous NTG calculations are discussed below.

**Net-to-Gross Calculations.** The Navy incorrectly included storage and machine shop space in applying the 1.65 NTG conversion factor<sup>4</sup> to compute basic facility requirements reflected in the RBFR. Specifically, the Navy incorrectly included storage and machine shop space in the NTG calculations for category code<sup>5</sup> "316-10." NAVFAC Publication P-80 states that the 1.65 NTG conversion factor contains a built-in allowance for storage and laboratory support shop space, i.e., storage and machine shop space. Therefore, the inclusion of storage and machine shop space in the NTG calculations reflected in the RBFR was inappropriate.

Similarly, the NTG calculations for the administration and support building were computed erroneously. The Navy incorrectly used an NTG conversion factor of 1.25 to compute the gross floor area allowable for the administration and support building. NAVFAC Publication P-80, Section 610-10, states that:

To compute gross floor area, the net floor should be multiplied by an adjustment factor to compensate for common circulation, mechanical equipment spaces, and wall thicknesses. This factor ranges from 1.12 for efficiently laid out buildings to 1.25 for buildings with less efficient layout or having some unusual constraints. The adjustment factor of 1.25 shall be the maximum allowable to determine gross floor area.

Documentation provided by the Navy states that "the new design for P-146T is more efficient than existing space at White Oak; therefore, functions could be performed in less space." Navy documentation further states that:

The less space shown on the DD Form 1391, dated August 25, 1994 . . . is due to the following factors: (a) the new design allows for greater efficiencies and reduces wasted space; (b) the existing facilities at White Oak were built at different periods, evolved over time and are not as efficient as the new design; (c) various existing facilities will not be duplicated since the proposed project's efficient

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<sup>3</sup>NAVFAC Instruction 11010.44E defines basic facility requirements as those minimum facilities (by category code) necessary to perform the mission of a shore activity.

<sup>4</sup>Net-to-gross conversion factor is used to convert a net floor area to a gross floor/building area (net floor area X NTG conversion factor = gross floor/building area).

<sup>5</sup>Chapter II of NAVFAC P-80 contains specific criteria for various facility types with identifying category code numbers. The category code system provides uniform identification of all facilities.

## Base Realignment and Closure Military Construction Requirements and Costs

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design allows for better utilization and workload coordination; and  
(d) consolidation of functions into a single structure provided better utilization of spaces.

Consequently, the Navy use of a 1.25 NTG conversion factor reflected in the RBFR's calculations was inappropriate. Rather, the use of an NTG conversion factor of 1.12 would have been more consistent with efficiently laid out buildings and in accordance with NAVFAC Publication P-80 guidelines. In computing gross floor area for the administration and support building, the Navy should have used an NTG conversion factor of 1.12.

**Magazine Requirements.** Another erroneous NTG calculation in the RBFR concerned magazine requirements for storage of explosives. As a result of the Navy decision to transfer portable magazines from the White Oak site to the Indian Head site, magazine requirements were deleted from the revised DD Form 1391. Consequently, magazines for storage of explosives were not within the scope of valid BRAC MILCON project requirements. Therefore, it was inappropriate for the Navy to include magazine requirements in the NTG calculations reflected in the RBFR.

**Determination of BRAC MILCON Requirements.** The net effect of the erroneous NTG calculations reflected in the RBFR overstated BRAC MILCON requirements for project P-146T. We recalculated NTG space requirements and costs relating to the project, which consists of five bomb-proof laboratories and an administration and support building. As a result, space requirements were overstated by 3,020 square feet, at a cost of approximately \$0.9 million. Details of our recalculations are discussed below and are in Appendix E.

**50-Pound Laboratory.** BRAC MILCON costs for the 50-pound laboratory should be reduced by approximately \$106,500. After reviewing the RBFR, we identified that the Navy overstated the 50-pound laboratory space requirements by 355 square feet based on the difference between the revised DD Form 1391 (5,830 square feet) and the allowable 5,475 square feet (3,316<sup>6</sup> net square feet X 1.65 NTG conversion factor). Therefore, the cost of the 50-pound laboratory was overstated by approximately \$106,500 (5,830 square feet minus 5,475 square feet X \$300 per square foot). The resubmitted DD Form 1391 should delete BRAC MILCON funds for the 50-pound laboratory by \$106,500.

**Thermal Studies Laboratory.** BRAC MILCON costs for the thermal studies laboratory should be reduced by approximately \$129,000. The Navy overstated the thermal studies laboratory space requirements based on the difference between the revised DD Form 1391 (1,570 square feet) and the allowable 1,140 square feet (689 net square feet X 1.65 NTG conversion factor). Therefore, the cost of the thermal studies laboratory was overstated by approximately \$129,000 (1,570 square feet minus 1,140 square feet X \$300 per square foot.) The resubmitted DD Form 1391 should delete BRAC MILCON funds for the thermal studies laboratory by \$129,000.

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<sup>6</sup>Examples of net square footage are explained in Appendix E.

**Shock Physics Laboratory.** BRAC MILCON costs for the shock physics laboratory should be reduced by approximately \$102,000. After reviewing the RBFR, we determined that the Navy overstated the shock physics laboratory space requirements by 340 square feet based on the difference between the revised DD Form 1391 (2,450 square feet) and the allowable 2,110 square feet (1,277 net square feet X 1.65 NTG conversion factor). The resubmitted DD Form 1391 should delete BRAC MILCON funds for the shock physics laboratory by \$102,000.

Further, the decision to upgrade explosive limits for the shock physics laboratory from 5 pounds to 10 pounds was outside the scope of valid BRAC MILCON requirements. The current explosive limit for the existing comparable bomb-proof laboratory at the losing installation was 5 pounds. The Navy reasoned that since the energetics of newer explosives was approaching 10-pound limits, upgrading the shock physics laboratory explosive limits from 5 pounds to 10 pounds would provide decreased usage of the 50-pound laboratory.

We agree with the Navy position that the energetics of newer explosives could be approaching 10-pound limits and that upgrading explosive limits of the shock physics laboratory to 10-pound capability may provide decreased usage of the 50-pound laboratory. However, existing public law, DoD guidance, and Navy regulations take precedence over those concerns. The scope of work planned under the proposed explosive limits upgrades are not valid BRAC MILCON requirements. Therefore, costs associated with upgrading the shock physics laboratory explosive limits to 10-pound capability may not be funded through the BRAC MILCON appropriation. Costs related to upgrading explosive limits could not be quantified at the time of our audit. The Navy needs to recalculate the estimated cost of the shock physics laboratory based on the original 5-pound capability versus 10-pound capability and reduce BRAC MILCON costs for the shock physics laboratory accordingly.

**Detonation Physics Laboratory.** Similarly, BRAC MILCON costs for the detonation physics laboratory should be reduced by approximately \$100,500. The Navy overstated the detonation physics laboratory space requirements by 335 square feet based on the difference between the revised DD Form 1391 (2,450 square feet) and the allowable 2,115 square feet (1,280 net square feet X 1.65 NTG conversion factor). The resubmitted DD Form 1391 should delete BRAC MILCON funds for the detonation physics laboratory by \$100,500.

Similarly, the decision to upgrade explosive limits for the detonation physics laboratory from 5 pounds to 10 pounds was outside the scope of valid BRAC MILCON requirements. The current explosive limit for the existing comparable bomb proof laboratory at the losing installation was 5 pounds. Costs associated with providing the detonation physics laboratory with 10-pound capability should not be funded with BRAC MILCON funds. Costs related to upgrading explosive limits could not be quantified at the time of our audit. Therefore, the Navy needs to recalculate the estimated cost of the

## **Base Realignment and Closure Military Construction Requirements and Costs**

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detonation physics laboratory based on the original 5-pound capability versus 10-pound capability and reduce BRAC MILCON costs for the detonation physics laboratory accordingly.

**Gun Facility Laboratory.** BRAC MILCON costs for the gun facility laboratory should be reduced by approximately \$87,000. After reviewing the RBFR, we determined that the Navy overstated the gun facility laboratory space requirements by 290 square feet based on the difference between the revised DD Form 1391 (4,790 square feet) and the allowable 4,500 square feet (2,724 net square feet X 1.65 NTG conversion factor). Therefore, the cost of the gun facility laboratory was overstated by approximately \$87,000 (4,790 minus 4,500 X \$300 per square foot). The resubmitted DD Form 1391 should delete BRAC MILCON funds for the gun facility laboratory by \$87,000.

**Administration and Support Building.** BRAC MILCON costs for the administration and support building should be reduced by approximately \$381,000. The Navy overstated the administration and support building space requirements by 1,270 square feet based on the difference between the revised DD Form 1391 (7,640 square feet) and the allowable 6,370 square feet (5,687 net square feet X 1.12 NTG conversion factor). BRAC MILCON costs for the administration and support building were overstated by approximately \$381,000 (7,640 minus 6,370 X \$300 per square foot). The resubmitted DD Form 1391 should delete BRAC MILCON funds for the administration and support building by \$381,000.

## **Requirement for Economic Analysis or Alternatives to Military Construction**

The Comptroller of the Department of Defense [now designated as the Under Secretary of Defense (Comptroller)] issued an August 2, 1991, memorandum directing the Military Departments to prepare an economic analysis for all MILCON, major repairs, or renovation projects estimated to cost more than \$2 million. The NSWC planning officials did not perform an economic analysis before concluding that new construction to satisfy administrative space requirements relating to the Explosive Test Facility Complex was the only alternative. When alternatives are not considered, management has no basis for making sound BRAC MILCON planning, programming, and budgeting decisions. The analysis should be prepared in accordance with guidance in NAVFAC Pamphlet P-442, "Economic Analysis Handbook."

A portion of the Explosive Test Facility Complex was developed to provide administrative space for approximately 21 explosive research personnel relocating to NSWC, Indian Head. NSWC planning officials believed that only new construction satisfied administrative space requirements for the 21 explosive research personnel. However, NSWC, Indian Head, has planned and programmed several renovation and new construction projects to accommodate the BRAC decision to realign the Energetic Materials Research and Technology Department at NSWC, White Oak, to NSWC, Indian Head.



The realignment action involves more than 120 NSWC, White Oak, personnel. NSWC planning officials need to determine whether the planned and programmed renovations and new construction projects will satisfy administrative space requirements relating to the 21 explosive research personnel or whether administrative space in existing buildings would satisfy these requirements.

### Facility Categories

Chapter II of NAVFAC Publication P-80, "Facility Planning Criteria for Navy and Marine Corps Shore Installations," October 1982, contains specific criteria for various facility types with identifying category code numbers. The category code system provides uniform identification of all facilities. The system is used in every phase of planning, programming, project processing, construction, and inventory of real property assets. Further, NAVFAC Publication P-80, Section V, paragraph 2, states, in part, "The [facility] planner must ensure the correct codification of each particular facility, since an error will cause delays in processing through the planning and programming system."

Both the original and revised DD Forms 1391 contained an incorrect category code for the proposed BRAC MILCON project, the Explosive Test Facility Complex. The category code on both the original and revised DD Forms 1391 was incorrectly assigned "310-15." NAVFAC Publication P-80 defines category code "310-15" as "Materials Laboratory. This facility is used for research, development, test and evaluation . . . of non-destructive as well as destructive testing of components and assemblies for Navy weapons . . . *excluding explosives and propellants* (emphasis added)."

The correct category code is "316-10." NAVFAC Publication P-80 defines category code "316-10" as "Ammunition, Explosives, and Toxics Laboratory. This facility is used to support the research, development, test and evaluation of ammunition, rockets, bombs, mines, grenades . . . related chemicals, etc. and their components and materials." Navy planning officials should update the revised DD Form 1391 to reflect the correct category code.

### Conclusion

The BRAC MILCON process is accomplished more quickly than the normal MILCON process. The shorter time forces planning officials to take short cuts, in effect increasing the vulnerability of BRAC funds to waste. When we used the new data the Navy provided in response to the draft report, we calculated overstated requirements of 3,020 square feet, or \$0.9 million, and the DD Form 1391 should be reduced to reflect the difference. In addition, estimated costs for the project, valued at approximately \$9.4 million, included work outside the scope of the valid BRAC MILCON requirements and were, therefore,

questioned. If the Navy recalculates costs associated with providing two laboratories with 5-pound capability versus 10-pound capability, additional monetary benefits could be realized.

## Recommendations, Management Comments, and Audit Response

**Revised and Renumbered Recommendations.** As a result of management comments and additional audit work, we revised two recommendations and renumbered the draft recommendations accordingly. For a complete text of management comments, see Part III.

### 1. We recommend that the Under Secretary of Defense (Comptroller):

a. Suspend funding by \$9.4 million for FY 1996 base realignment and closure military construction project P-146T, "Explosive Test Facility Complex," until the Commander, Naval Surface Warfare Center, Indian Head Division, provides a revised DD Form 1391 that reflects the budget reductions required by Recommendations 3.a. and 3.b.

b. Delete funding for project P-146T, "Explosive Test Facility Complex," by \$0.9 million.

**Under Secretary of Defense (Comptroller) Comments.** The Under Secretary of Defense (Comptroller) concurred and agreed to place funds for the project on administrative hold pending resolution of issues.

**Audit Response.** The actions proposed by the Under Secretary of Defense (Comptroller) met the intent of our recommendations. However, we revised the draft report recommendations as a result of additional information the Navy provided in response to the draft report and additional audit work performed based on those comments. Therefore, we request that the Under Secretary of Defense (Comptroller) provide comments on the revised Recommendations 1.a. and 1.b. to suspend funding by \$9.4 million and to delete funding by \$0.9 million in its response to the final report.

2. We recommend that the Commander, Naval Facilities Engineering Command, enforce existing management control procedures requiring that DD Forms 1391 be accurate, reliable, and derived from verifiable data by validating and certifying project planning documentation before programming, budgeting, and designing.

**Navy Comments.** The Navy concurred and agreed to advise staff to adhere to NAVFAC guidance on reviewing and certifying DD Forms 1391.

**Audit Response.** The actions proposed by the Navy met the intent of our recommendation.

**3. We recommend that the Commander, Naval Surface Warfare Center, Indian Head Division:**

**a. Suspend project P-146T pending a recalculation of the costs associated with providing the shock physics laboratory and the detonation physics laboratory with 5-pound explosive limits versus 10-pound explosive limits and reduce project P-146T costs accordingly.**

**b. Reduce funding by \$0.9 million for project P-146T as a result of overstated requirements.**

**c. Revise DD Form 1391 for project P-146T to reflect the results of analysis required by Recommendation 3.a. and the reduced funding as a result of Recommendation 3.b.**

**d. Update DD Form 1391 with the correct category code, "316-10," for project P-146T, "Explosive Test Facility Complex."**

**e. Conduct an economic analysis of Indian Head Division's administrative space and evaluate possible alternatives to new construction for the portion of project P-146T, "Explosive Test Facility Complex," relating to administrative space requirements.**

**Navy Comments.** In response to draft Recommendation 3.a. regarding updating the DD Form 1391 with the correct category code, the Navy concurred stating that the DD Form 1391 will be revised to reflect category code "316-10." Regarding draft Recommendation 3.b. for conducting an economic analysis of administrative space, the Navy concurred stating that the economic analysis has been completed and is included in Section 5 of the "Relocation Basic Facility Requirements."

However, the Navy nonconcurred with draft Recommendation 3.c. to reduce project P-146T funding stating that its revised DD Form 1391 (dated August 25, 1994) does not support the budget reduction. The Navy also stated that the capacity of two chambers increased due to current projected mission requirements, nature of the state-of-the-art explosives being tested, and the efficiencies resulting from decreased usage of the large 50-pound chamber.

In addition, the Navy stated that "research support" and "research office" are treated alike; machine shop areas used to machine explosives or fabricate fixtures are not synonymous with "machinery spaces" that are for items such as valves, pipes, and heating; "preparatory spaces" are not "research support" and should not be included (in NTG calculations); NAVFAC Publication P-80 allows for "one-of-a-kind" facilities; and a factor of 2.2 NTG is utilized for special facilities.

The Navy also stated that the RBFR is the amount of space required to duplicate the White Oak facilities after applying explosive safety and Navy occupational safety and health criteria. The Navy also stated that the original DD Form 1391 was based on incomplete and inaccurate data and did not reflect all of White Oak's existing facilities and spaces used for the explosive research functions that

## Base Realignment and Closure Military Construction Requirements and Costs

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will be carried out in P-146T. The Navy also stated that project P-146T is providing fewer bomb-proof facilities than those currently operational at White Oak.

**Audit Response.** The actions proposed by the Navy regarding updating the DD Form 1391 with the correct category code and conducting an economic analysis of administrative space met the intent of draft Recommendations 3.a. and 3.b., now renumbered as 3.d. and 3.e. We request the Navy provide a copy of the revised DD Form 1391 reflecting the correct category code "316-10" in its response to the final report. No further comments are required for Recommendations 3.d. and 3.e.

However, we disagree with Navy comments regarding draft Recommendation 3.c., now revised and renumbered as 3.a., 3.b., and 3.c. The scope of work planned under the proposed explosive limits upgrades are not valid BRAC MILCON requirements. Clearly, if a facility deficiency exists at a losing activity, the deficiency should be corrected under separate non-BRAC projects. Public law, DoD guidance, and Navy regulations specifically prohibit the use of BRAC funds for facility improvements and modernizations that are normally funded through the appropriations process. Therefore, the decision on whether to use BRAC MILCON in financing the proposed explosive limits upgrades is not a subjective call, for the reasons explained in this report. The Navy has not provided documentation to show that either upgrading explosive limits for the two bomb-proof chambers is exempt from public law, DoD guidance, and Navy regulations limiting the use of BRAC MILCON funds or that the Navy has obtained a waiver stipulating that BRAC MILCON funds may be used for upgrading explosive limits for the two bomb-proof chambers.

Further, we agree with Navy comments that the only significant difference between a 5-pound chamber and a 10-pound chamber is the wall thickness surrounding the actual chamber. However, the relationship between the wall thicknesses for a 5-pound chamber versus a 10-pound chamber is linear. For example, if a 5-pound chamber requires a 2-foot wall thickness, then a 10-pound chamber would require a 4-foot wall thickness. Therefore, we assume that the estimated cost associated with a 4-foot wall thickness is double the estimated cost associated with a 2-foot wall thickness. The Navy has not provided documentation to support its contention that design estimates indicated that the increase in wall thickness had a minimum cost impact. The recommendation is valid and we request the Navy estimate the cost of the two bomb-proof chambers based on 5-pound explosive limits versus 10-pound explosive limits and provide the results of the revised estimates in its response to the final report.

We agree with Navy comments that "research support" space and "research office" space are treated alike. NAVFAC Publication P-80 states that net floor areas for office space should be calculated by utilizing the NTG conversion factors shown under category code 610-10. It further states that NTG conversion factors to be used for research support space are the same as for research office space. The Navy combined its "research support" and "research office" space in the administration and support building. Therefore, an NTG conversion factor of 1.12 should have been used to calculate the space

allowable, as discussed in this report. Further, we agree with Navy comments that "machine shop areas" are not synonymous with "machinery spaces." The finding makes no reference to "machinery spaces" used for items such as valves, pipes, and heating. "Machine shop areas" are properly classifiable as "laboratory support shop space" and are, therefore, properly excluded from NTG calculations, in accordance with NAVFAC Publication P-80.

We disagree with Navy comments that preparatory space should not be included in NTG calculations. White Oak's explosives preparation facilities are classifiable as "bench type laboratories" and are, therefore, properly included in NTG calculations, in accordance with NAVFAC Publication P-80, Chapter 2, paragraph 3. Generically, bench type laboratories are stand-alone facilities or areas that house instrumentation and work-benches for accommodating the set-up, reconfiguration, fabrication, and/or testing of materiel. Moreover, if preparation areas were excluded from NTG calculations in accordance with the Navy position, then the estimated space requirements would be considerably less than our estimated space requirements of 21,710 square feet.

We further disagree with Navy comments that these are "one-of-a-kind" facilities and that, therefore, use of an NTG conversion factor of 2.2 would have been more appropriate. The Navy's revised DD Form 1391, dated August 25, 1994, acknowledges other existing DoD bomb-proof facilities. In addition, we are aware of other DoD bomb-proof facilities that were not cited in the revised DD Form 1391. Therefore, the RBFR correctly utilized an NTG conversion factor of 1.65 in computing space requirements relating to category code "316-10," in accordance with NAVFAC Publication P-80, Chapter 2, paragraph 3.

In addition, the Navy contention that the RBFR is the amount of space required to duplicate the White Oak facilities is misleading. The Navy basic facility requirements for this BRAC MILCON project are not represented by the entire inventory of White Oak facilities as reflected in the RBFR. Rather, the basic facility requirements for this BRAC MILCON project are those bomb-proof facilities necessary to perform the explosive test function at the Indian Head site. In that regard, the RBFR overstates the space requirements for bomb-proof functions being transferred to the Indian Head site. Navy management decided that the explosive test function could be performed at the Indian Head site with fewer bomb-proof facilities than exist at the White Oak site. Whereas the White Oak site contains eight bomb-proof facilities, the proposed Indian Head BRAC MILCON project will comprise only five bomb-proof facilities. Therefore, the Indian Head BRAC MILCON project does not represent a one-for-one replacement of the entire inventory of existing White Oak explosive test facilities. We request that the Navy reconsider its position and provide comments to Recommendation 3. in its response to the final report.

## **Part II - Additional Information**

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## Appendix A. Scope and Methodology

**Scope of This Audit.** We examined the FY 1996 BRAC MILCON budget estimate and related documentation for one project regarding the realignment of NSWC, White Oak, Maryland, explosive research functions, personnel, and equipment to NSWC, Indian Head, Maryland. The project was estimated to cost \$10.3 million.

**Use of Computer-Processed Data.** We did not rely on computer-processed data to conduct this review.

**Audit Period, Standards, and Locations.** We conducted this economy and efficiency audit from January through April 1995 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. Accordingly, we included such tests of management controls as considered necessary. See Appendix F for the potential benefits resulting from the audit. Appendix G lists the organizations visited or contacted during the audit.

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## **Appendix B. Summary of Prior Audits and Other Reviews**

The Office of the Assistant Inspector General for Auditing conducted two audits of BRAC MILCON projects realigning to NSWC in FY 1993.

**Report No. 93-092, "Base Realignment and Closure Budget Data for the Naval Surface Warfare Center," April 29, 1993.** The report provided the results of the realignment of the Combined Research Laboratory to NSWC, Dahlgren, Virginia, and the realignment of the Hull, Mechanical, and Electrical, In-Service Engineering Program to the Naval Ship Systems Engineering Station, NSWC, Philadelphia, Pennsylvania. The report stated that the \$26.4 million military construction estimate for project P-273S, "Combined Research Laboratory," was overstated by at least \$4.65 million. In addition, the report stated that the Navy did not fully justify BRAC MILCON requirements for project P-010S, "Gas Turbine Ship-Building Modifications," relating to the realignment of the Hull, Mechanical, and Electrical, In-Service Engineering Program from NSWC, Annapolis, Maryland, and from the Philadelphia Naval Shipyard to the Naval Ship Systems Engineering Station, NSWC, Philadelphia, Pennsylvania. As much as \$9.8 million of BRAC MILCON costs were questionable. The report recommended that the Navy revise and resubmit construction estimates for project P-273S to reflect project costs based on known requirements and that NAVCOMPT reduce the funding for project P-273S by at least \$4.65 million. The report also recommended that the Navy revise and resubmit cost estimates for project P-010S based on planned workload and equipment space requirements and that Naval Sea Systems Command implement controls to validate data on DD Forms 1391 before budget submission. The Navy concurred with the report's recommendations.

**Report No. 93-052, "Defense Base Realignment and Closure Budget Data for the Naval Surface Warfare Center," February 10, 1993.** The report provided the results of the realignment of NSWC elements from White Oak, Maryland, and Panama City, Florida, to Dahlgren, Virginia, and realignment of the NSWC element in Annapolis, Maryland, to Carderock, Maryland. The report stated that the Navy overstated the cost of the Dahlgren project by approximately \$18.4 million. In addition, the Navy also understated the costs of two Carderock projects by \$7.5 million. The report recommended that NSWC prepare a new DD Form 1391 for NSWC, Dahlgren, project P-267S in accordance with the documentation and cost factors in NAVFAC Instruction 11010.44E, Military Handbook 1010, and related A-E studies, and revise and resubmit DD Form 1391 for the Ship Materials Technology Facility, NSWC, Carderock, project P-179S to include the total project scope for the Ships Materials Engineering Department. The report also recommended that NAVCOMPT reduce the total cost estimate for military construction for the sewage treatment plant, NSWC, Dahlgren, project P-267S by \$13.0 million to \$18.4 million to take into account overstated costs and duplicate requirements. The Navy concurred with the report's recommendations.



## **Appendix B. Summary of Prior Audits and Other Reviews**

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Since 1991, numerous audit reports have addressed DoD BRAC issues. This appendix lists selected DoD and Navy BRAC reports.

### **Inspector General, DoD**

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
95-284	Defense Base Realignment and Closure Budget Data for the Move of the Naval Air Warfare Center, Aircraft Division, Trenton, New Jersey, to the Naval Air Warfare Center, Aircraft Division, Patuxent River, Maryland, and Arnold Air Force Base, Tennessee	August 4, 1995
95-283	Defense Base Realignment and Closure Budget Data for the Closure of Fort Devens, Massachusetts	August 1, 1995
95-282	Defense Base Realignment and Closure Budget Data for the Realignment of the HAVE NAP Maintenance Complex from Castle Air Force Base, California, to Barksdale Air Force Base, Louisiana	August 1, 1995
95-278	Defense Base Realignment and Closure Budget Data for the Family Practice Clinic, Fort Huachuca, Arizona	July 14, 1995
95-276	Defense Base Realignment and Closure Budget Data for the Closure of Naval Air Station Barbers Point, Hawaii, and Realignment to Naval Air Station Whidbey Island, Washington	July 7, 1995
95-272	Defense Information School at Fort George G. Meade Base Realignment and Closure Military Construction Project	June 30, 1995

## Appendix B. Summary of Prior Audits and Other Reviews

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### Inspector General, DoD (cont'd)

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
95-258	Defense Base Realignment and Closure Budget Data for the Naval Hospital, Lemoore, California	June 28, 1995
95-257	Defense Base Realignment and Closure Budget Data for the Realignment of the National Airborne Operations Center Forward Operating Base From Grissom Air Force Base, Indiana, to Wright-Patterson Air Force Base, Ohio	June 27, 1995
95-250	Defense Base Realignment and Closure Budget Data for Randolph Air Force Base, San Antonio, Texas	June 23, 1995
95-249	Defense Base Realignment and Closure Budget Data for Goodfellow Air Force Base, San Angelo, Texas	June 23, 1995
95-248	Defense Base Realignment and Closure Budget Data for Sheppard Air Force Base, Wichita Falls, Texas	June 23, 1995
95-247	Defense Base Realignment and Closure Budget Data for the Naval Aviation Depot, North Island, California	June 23, 1995
95-226	Defense Base Realignment and Closure Budget Data for the Realignment of Rickenbacker Air National Guard Base, Ohio	June 8, 1995
95-223	Defense Base Realignment and Closure Budget Data for the Closure of Marine Corps Air Stations El Toro and Tustin, California, and Realignment to Naval Air Station, Miramar, California	June 8, 1995

## **Appendix B. Summary of Prior Audits and Other Reviews**

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### **Inspector General, DoD (cont'd)**

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
95-222	Defense Base Realignment and Closure Budget Data for the Proposed Construction of the Automotive Vehicle Maintenance Facility, Guam	June 7, 1995
95-221	Defense Base Realignment and Closure Budget Data for the Closure of Naval Training Center, San Diego, California	June 6, 1995
95-213	Defense Base Realignment and Closure Budget Data for the Naval Training Center, Great Lakes, Illinois	June 2, 1995
95-212	Defense Base Realignment and Closure Budget Data for Fort Jackson, South Carolina	June 2, 1995
95-208	Defense Base Realignment and Closure Budget Data for Realignment of Construction Battalion Unit 416 from Naval Air Station, Alameda, California, to Naval Air Station, Fallon, Nevada	May 31, 1995
95-205	Defense Base Realignment and Closure Budget Data for the Relocation of Marine Corps Manpower Center at Marine Corps Combat Development Command, Quantico, Virginia	May 26, 1995
95-203	Defense Base Realignment and Closure Budget Data for the Army Reserve Center, Sacramento, California	May 25, 1995

**Inspector General, DoD (cont'd)**

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
95-198	Defense Base Realignment and Closure Budget Data for the Closure of the Underway Replenishment Training Facility, Treasure Island, California, and Realignment to the Expeditionary Warfare Training Group Atlantic, Norfolk, Virginia	May 19, 1995
95-196	Defense Base Realignment and Closure Budget Data for the Closure of Naval Air Station, Alameda, California, and Realignment to Puget Sound Naval Shipyard, Washington	May 17, 1995
95-191	Defense Base Realignment and Closure Budget Data for the Closure of Naval Reserve Readiness Center, San Francisco, California, and Realignment to Naval and Marine Corps Reserve Center, Alameda, California	May 15, 1995
95-172	Defense Base Realignment and Closure Budget Data for Griffiss Air Force Base, New York	April 13, 1995
95-154	Audit of Construction Budget Data for Realigning Naval Training Centers Orlando and San Diego to Various Locations	March 21, 1995
95-150	Defense Base Realignment and Closure Budget Data for Closing Naval Station Charleston, South Carolina, and Realigning Projects at Various Sites	March 15, 1995

## Appendix B. Summary of Prior Audits and Other Reviews

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### Inspector General, DoD (cont'd)

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
95-051	Defense Base Realignment and Closure Budget Data for Closing Mare Island Naval Shipyard, California, and Realigning Projects to Various Sites	December 9, 1994
95-041	Defense Base Closure and Realignment Budget Data for the Closure of Marine Corps Air Stations El Toro and Tustin, California and the Realignment to Naval Air Station Miramar, California	November 25, 1994
95-039	Defense Base Closure and Realignment Budget Data for Naval Air Station Miramar, California, Realigning to Naval Air Station Fallon, Nevada	November 25, 1994
95-037	Realignment of the Fleet and Mine Warfare Training Center from Naval Station Charleston, South Carolina, to Naval Station Ingleside, Texas	November 23, 1994
95-029	Defense Base Closure and Realignment Budget Data for Naval Air Station Miramar, California, and Realigning Projects to Various Sites	November 15, 1994
95-010	Defense Base Closure and Realignment Budget Data for Marine Corps Air Station Tustin, California, and Realignment to Marine Corps Air Station Camp Pendleton, California	October 17, 1994
94-179	Defense Base Closure and Realignment Budget Data for McGuire Air Force Base, New Jersey; Barksdale Air Force Base, Louisiana; and Fairchild Air Force Base, Washington	August 31, 1994

**Inspector General, DoD (cont'd)**

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
94-146	Defense Base Closure and Realignment Budget Data for Closing Naval Air Station Cecil Field, Florida, and Realigning Projects to Various Sites	June 21, 1994
94-141	Defense Base Closure and Realignment Budget Data for Naval Air Station Dallas, Texas, and Memphis, Tennessee, Realigning to Carswell Air Reserve Base, Texas	June 17, 1994
94-127	Defense Base Closure and Realignment Budget Data for the Realignment of the Defense Personnel Support Center to the Naval Aviation Supply Office Compound in North Philadelphia, Pennsylvania	June 10, 1994
94-126	Defense Base Closure and Realignment Budget Data for the Closure of Naval Air Station Glenview, Illinois, and Realignment Projects at Fort McCoy, Wisconsin, and Carswell Air Reserve Base, Texas	June 10, 1994
94-125	Defense Base Closure and Realignment Budget Data for the Naval Medical Center Portsmouth, Virginia	June 8, 1994
94-121	Defense Base Closure and Realignment Budget Data for Naval Air Technical Training Center, Naval Air Station Pensacola, Florida	June 7, 1994
94-109	Quick-Reaction Report on the Audit of Defense Base Closure and Realignment Budget Data for Naval Training Center Great Lakes, Illinois	May 19, 1994

## Appendix B. Summary of Prior Audits and Other Reviews

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### Inspector General, DoD (cont'd)

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
94-108	Quick-Reaction Report on the Audit of Defense Base Closure and Realignment Budget Data for Naval Station Treasure Island, California	May 19, 1994
94-107	Griffiss Air Force Base, New York, Defense Base Closure and Realignment Budget Data for Military Construction at Other Sites	May 19, 1994
94-105	Defense Base Closure and Realignment Budget Data for a Tactical Support Center at Naval Air Station Whidbey Island, Washington	May 18, 1994
94-104	Defense Base Closure and Realignment Budget Data for the Defense Contract Management District-West	May 18, 1994
94-103	Air Force Reserve 301st Fighter Wing Covered Aircraft Washrack Project, Carswell Air Reserve Base, Texas	May 18, 1994
94-040	Summary Report on the Audit of Defense Base Closure and Realignment Budget Data for Fiscal Years 1993 and 1994	February 19, 1994
93-100	Summary Report on the Audit of Defense Base Closure and Realignment Budget Data for Fiscal Years 1992 and 1993	May 25, 1993

## Appendix B. Summary of Prior Audits and Other Reviews

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### Naval Audit Service

<u>Report No.</u>	<u>Report Title</u>	<u>Date</u>
041-S-94	FY 1995 Military Construction Projects From Decisions of 1993 Base Closure and Realignment Commission	April 15, 1994
023-S-94	Military Construction Projects Budgeted and Programmed for Bases Identified for Closure or Realignment	January 14, 1994
023-C-93	Implementation of the 1993 Base Closure and Realignment Process	March 15, 1993



## Appendix C. Background of Defense Base Realignment and Closures and Scope of the Audit of FY 1996 Defense Base Realignment and Closure Military Construction Costs

**Commission on Defense Base Realignment and Closure.** On May 3, 1988, the Secretary of Defense chartered the Commission on Defense Base Realignment and Closure (the Commission) to recommend military installations for realignment and closure. Congress passed Public Law 100-526, "Defense Authorization Amendments and Base Closure and Realignment Act," October 24, 1988, which enacted the Commission's recommendations. The law also established the DoD Base Closure Account to fund any necessary facility renovation or MILCON projects associated with BRAC. Public Law 101-510, "Defense Base Closure and Realignment Act of 1990," November 5, 1990, reestablished the Commission. The law also chartered the Commission to meet during calendar years 1991, 1993, and 1995 to verify that the process for realigning and closing military installations was timely and independent. In addition, the law stipulates that realignment and closure actions must be completed within 6 years after the President transmits the recommendations to Congress. The following table summarizes the current estimated costs and net savings for the previous three BRAC actions and the actions recommended in the 1995 Commission decisions.

**BRAC Costs and Savings**  
(Billions of FY 1996 Dollars)

	<u>BRAC Actions</u>		<u>Closure</u>	<u>6-Year Net</u>	<u>Recurring</u>	<u>Total</u>
	<u>Realignments</u>	<u>Closures</u>	<u>Costs</u>	<u>Savings</u>	<u>Annual</u>	<u>Savings</u>
					<u>Savings</u>	
1988	86	59	\$ 2.2	\$0.3	\$0.7	\$ 6.8
1991	34	48	4.0	2.4	1.6	15.8
1993	<u>130</u>	<u>45</u>	<u>6.9</u>	<u>0.4</u>	<u>1.9</u>	<u>15.7</u>
Subtotal	250	152	\$13.1	\$3.1	\$4.2	\$38.3
1995	<u>113</u>	<u>33</u>	<u>3.8</u>	<u>4.0</u>	<u>1.8</u>	<u>18.4</u>
Total	363	185	\$16.9	\$7.1	\$6.0	\$56.7

**Required Defense Reviews of Base Realignment and Closure Estimates.** Public Law 102-190, "National Defense Authorization Act for Fiscal Years 1992 and 1993," December 5, 1991, states that the Secretary of Defense shall ensure that the authorization amount that DoD requested for each MILCON project associated with BRAC actions does not exceed the original estimated cost provided to the Commission. Public Law 102-190 also states that the Inspector General, DoD, must evaluate significant increases in BRAC MILCON project costs over the estimated costs provided to the Commission and send a report to the congressional Defense committees.

## **Appendix C. Background of Defense Base Realignment and Closures and Scope of the Audit of FY 1996 Defense Base Realignment and Closure Military Construction Costs**

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**Military Department Base Realignment and Closure Cost-estimating Process.** To develop cost estimates for the Commission, the Military Departments used the Cost of Base Realignment Actions (COBRA) computer model. COBRA uses standard cost factors to convert the suggested BRAC options into dollar values to compare the different options. After the President and Congress approve the BRAC actions, DoD realigning organization officials prepare a DD Form 1391, "FY 1996 Military Construction Project Data," for each individual MILCON project required to accomplish the realigning actions. COBRA provides cost estimates as a realignment and closure package for a particular realigning or closing base. The DD Form 1391 provides specific cost estimates for an individual BRAC MILCON project.

**Limitations and Expansion to Overall Audit Scope.** Because COBRA develops cost estimates as a BRAC package and not for individual BRAC MILCON projects, we were unable to determine the amount of cost increases for each individual BRAC MILCON project. Additionally, because of prior audit efforts that determined potential problems with all BRAC MILCON projects, our audit objectives included all large BRAC MILCON projects.

**Overall Audit Selection Process.** We reviewed the FY 1996 BRAC MILCON \$1.4 billion budget submitted by the Military Departments and the Defense Logistics Agency. We excluded projects that were previously reviewed by DoD audit organizations. We grouped the remaining BRAC MILCON projects by location and selected groups of projects that totaled at least \$1 million for each group.

## Appendix D. Summary of Navy DD Form 1391 Requirements

<u>Facility</u>	<u>Original DD Form 1391 dated June 30, 1993 (Square Feet)</u>	<u>Revised DD Form 1391 dated April 25, 1994 (Square Feet)</u>	<u>Revised DD Form 1391 dated August 25, 1994 (Square Feet)</u>
50-Pound Laboratory	5,650 <sup>1</sup>	5,650	5,830
Thermal Studies Laboratory	See Note <sup>1</sup>	See Note <sup>1</sup>	1,570
Shock Physics Laboratory	800 <sup>2</sup>	800	2,450
Detonation Physics Laboratory	800	800	2,450
Gun Facility Laboratory	900 <sup>2</sup>	900	4,790
Explosives Preparation Building	1,400	1,400	See Note <sup>3</sup>
Mechanical/ Electrical Shop	900	900	See Note <sup>4</sup>
Magazine	400	400	-0-
Ramps	3,000	-0-	-0-
Administration and Support Building	<u>5,500</u>	<u>5,500</u>	<u>7,640</u>
<b>Total</b>	<b>19,350</b>	<b>16,350</b>	<b>24,730</b>

<sup>1</sup>The original DD Form 1391, dated June 30, 1993, assumed that the 50-pound laboratory and the thermal studies laboratory would be combined that resulted in a combined space requirement of 5,650 square feet.

## **Appendix D. Summary of Navy DD Form 1391 Requirements**

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<sup>2</sup>The original DD Form 1391, dated June 30, 1993, assumed that the shock physics laboratory and the gun facility laboratory would be combined that resulted in a combined space requirement of 1,700 square feet.

<sup>3</sup>The revised DD Form 1391, dated August 25, 1994, assumed that each laboratory would require an independent, self-contained explosives preparation area.

<sup>4</sup>The revised DD Form 1391, dated August 25, 1994, assumed that the mechanical/electrical shop would be combined with the administration and support building.

## Appendix E. Inspector General Calculated Requirements vs. Navy Calculated Requirements

<b>Facility</b>	<b>Inspector General's Estimated Requirements<sup>1</sup> (Square Feet)</b>	<b>Overstated Requirements<sup>2</sup> (Square Feet)</b>	<b>Cost per Square Foot<sup>3</sup></b>
50 Pound Laboratory	5,475 <sup>4</sup>	355	\$106,500
Thermal Studies Laboratory	1,140 <sup>5</sup>	430	129,000
Shock Physics Laboratory	2,110 <sup>6</sup>	340	102,000
Detonation Physics Laboratory	2,115 <sup>7</sup>	335	100,500
Gun Facility Laboratory	4,500 <sup>8</sup>	290	87,000
Administration and Support Building	<u>6,370<sup>9</sup></u>	<u>1,270</u>	<u>\$381,000</u>
<b>Total</b>	<b>21,710</b>	<b>3,020</b>	<b>\$906,000</b>

<sup>1</sup>This column shows rounded totals.

<sup>2</sup>The overstated requirements are the difference between the Inspector General's Estimated Requirements and the revised DD Form 1391, dated August 25, 1994 (See Appendix D).

<sup>3</sup>Calculated by multiplying overstated requirements by \$300 per square foot, the cost per square foot as shown on the revised DD Form 1391, dated August 25, 1994.

<sup>4</sup>Calculated by multiplying the net square footage of the 50-pound laboratory building # 327 (3,003) plus the net square footage of the explosives preparation building # 326 (313) X 1.65 NTG conversion factor.

<sup>5</sup>Calculated by multiplying the net square footage of the thermal studies laboratory building # 331 (138) plus the net square footage of the instrumentation and control room building # 332 (128) plus the net square footage of the explosives preparation building # 308 (423) X 1.65 NTG conversion factor.

## Appendix E. Inspector General Calculated Requirements vs. Navy Calculated Requirements

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<sup>6</sup>Calculated by multiplying the net square footage of the shock physics laboratory building # 324 (913) plus the net square footage of the explosives preparation building # 316 (364) X 1.65 NTG conversion factor.

<sup>7</sup>Calculated by multiplying the net square footage of the detonation physics laboratory building # 325 (1,036) plus the net square footage of the explosives preparation building # 386 (244) X 1.65 NTG conversion factor.

<sup>8</sup>Calculated by multiplying the net square footage of the gun facility laboratory building # 317 (1,040) plus the net square footage of the explosives preparation buildings # 316 and # 319 (364 and 796, respectively) plus the net square footage for gun equipment in buildings # 325 and # 327 (224 and 300, respectively) X 1.65 NTG conversion factor.

<sup>9</sup>Calculated by multiplying the administrative and support space net square footage (5,687) X 1.12 NTG conversion factor.

## Appendix F. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
1.a.	Economy and Efficiency. Suspends FY 1996 BRAC MILCON funding until requirements reflect justifiable requirements and costs.	FY 1996 Base Closure Account funds of \$9.4 million put to better use.*
1.b.	Economy and Efficiency. Reduces FY 1996 BRAC MILCON funding to reflect revised requirements and costs.	FY 1996 Base Closure Account funds of \$0.9 million put to better use.
2.	Management Controls. Results in properly developed project requirements and budget estimates.	Nonmonetary.
3.a.	Economy and Efficiency and Compliance With Regulations and Laws. Revises BRAC MILCON estimates to reflect valid, justifiable requirements and costs.	Undeterminable. Monetary benefits included in Recommendation 1.a.*
3.b.	Economy and Efficiency and Compliance With Regulations and Laws. Revises BRAC MILCON estimates to reflect valid requirements and costs.	Funds put to better use. Monetary benefits included in Recommendation 1.b.
3.c.	Economy and Efficiency and Compliance With Regulations and Laws. Conducts an analysis to reflect justifiable requirements and costs and deletes unwarranted costs.	Undeterminable. Monetary benefits included in Recommendation 1.a.
3.d.	Economy and Efficiency. Reflects correct category code on DD Form 1391.	Nonmonetary.*

## Appendix F. Summary of Potential Benefits Resulting From Audit

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3.e.	Management Controls and Economy and Efficiency. Determines the most economical alternative to satisfy administrative and support space requirements.	Undeterminable. Monetary benefits included in Recommendation 1.a.*
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\*Exact amount of benefits to be realized will be determined after the Navy determines the actual requirements and revises and documents the DD Form 1391.



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## **Appendix G. Organizations Visited or Contacted**

### **Department of the Navy**

Office of the Assistant Secretary of the Navy (Installation and Environment)

Naval Surface Warfare Center, Arlington, VA

Indian Head Detachment, Indian Head, Maryland

White Oak Detachment, White Oak, MD

Naval Facilities Engineering Command, Alexandria, VA

Engineering Field Activity, Chesapeake Division, Washington, DC

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## **Appendix H. Report Distribution**

### **Office of the Secretary of Defense**

Under Secretary of Defense for Acquisition and Technology, Washington, DC  
    Director, Defense Logistics Studies Information Exchange  
Under Secretary of Defense (Comptroller), Washington, DC  
    Deputy Chief Financial Officer  
    Deputy Comptroller (Program/Budget)  
Under Secretary of Defense for Personnel and Readiness  
Assistant Secretary of Defense (Economic Security)  
    Deputy Assistant Secretary of Defense (Installations)  
Assistant to the Secretary of Defense (Public Affairs)

### **Department of the Army**

Assistant Secretary of the Army (Financial Management and Comptroller)  
Auditor General, Department of the Army

### **Department of the Navy**

Assistant Secretary of the Navy (Financial Management and Comptroller)  
Assistant Secretary of the Navy (Installation and Environment)  
Comptroller of the Navy  
Deputy Chief of Naval Operations (Logistics)  
Commander, Naval Facilities Engineering Command  
    Commander, Chesapeake Engineering Field Division  
Commander, Naval Sea Systems Command  
Commander, Naval Surface Warfare Center  
    Commander, Indian Head Detachment  
    Commander, White Oak Detachment  
Auditor General, Department of the Navy

### **Department of the Air Force**

Assistant Secretary of the Air Force (Financial Management and Comptroller)  
Auditor General, Department of the Air Force

## **Defense Organizations**

Director, Defense Contract Audit Agency  
Director, Defense Logistics Agency  
Director, National Security Agency  
Inspector General, National Security Agency

## **Non-Defense Federal Agencies and Individuals**

Office of Management and Budget  
Technical Information Center, National Security and International Affairs Division,  
General Accounting Office

Chairman and ranking minority member of each of the following congressional committees and subcommittees:

Senate Committee on Appropriations  
Senate Subcommittee on Defense, Committee on Appropriations  
Senate Committee on Armed Services  
Senate Committee on Governmental Affairs  
House Committee on Appropriations  
House Subcommittee on Military Construction, Committee on Appropriations  
House Subcommittee on National Security, Committee on Appropriations  
House Committee on Government Reform and Oversight  
House Subcommittee on National Security, International Affairs, and Criminal  
Justice, Committee on Government Reform and Oversight  
House Committee on National Security  
House Subcommittee on Installations and Facilities, Committee on National Security

Honorable Barbara A. Mikulski, U.S. Senate  
Honorable Paul S. Sarbanes, U.S. Senate  
Honorable Steny H. Hoyer, U.S. House of Representatives  
Honorable Albert R. Wynn, U.S. House of Representatives

## **Part III - Management Comments**

# Under Secretary of Defense (Comptroller) Comments



COMPTROLLER  
(Program Budget)

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
1100 DEFENSE PENTAGON  
WASHINGTON, DC 20301-1100



JUN 22 1995

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING, DOD IG

SUBJECT: Draft Audit Report on Defense Base Realignment and Closure Budget Data for the Naval Surface Warfare Center, Indian Head, Maryland (Project No. 5CG-5017.23)

This responds to your May 31, 1995, memorandum requesting our comments on the subject report.

The audit recommends that the USD(Comptroller) suspend funding for project P-146T, "Explosive Test Facility Complex" at Indian Head, Maryland until the requirements and costs associated with it have been fully determined and validated.

The funding for this project is included in the FY 1996 BRAC budget request. We generally agree with the audit and recommendations and will place funds associated with the project on administrative withhold if the issue is not resolved by the start of the fiscal year. Further, any savings resulting from the audit will be reprogrammed to other valid BRAC requirements as appropriate.

  
B. R. Paseur

Director for Construction

# Department of the Navy Comments



DEPARTMENT OF THE NAVY  
NAVAL SURFACE WARFARE CENTER  
2631 JEFFERSON DAVIS HWY  
ARLINGTON VA 22262-6180

IN REPLY REFER TO:

11000  
Ser 04P/382  
29 Jun 95

FIRST ENDORSEMENT on NAVSURFWARCENTDIV Indian Head MD ltr 11000  
Ser 092/150 of 28 Jun 95

From: Commander, Naval Surface Warfare Center  
To: Commander, Naval Facilities Engineering Command, 200  
Stovall Street, Arlington, VA 22332

Subj: RESPONSE TO DEPARTMENT OF DEFENSE INSPECTOR GENERAL  
(DODIG) AUDIT 5CG-5017.23

.cl: (1) Response to DODIG Audit 5CG-5017.23

1. The Naval Surface Warfare Center (NAVSURFWARCEN) strongly supports Indian Head Division's justification of P-146T, the Explosive Test Facility. I concur with recommendations 3a. and b. of the DODIG Draft Audit Report dated May 31, 1995, however I do not concur with recommendation 3c. Our revised DD Form 1391 does not support the budget reduction recommended in 1b. Additional information is provided below.

2. As a result of BRAC 93, NAVSURFWARCEN was directed to move all explosive and related functions, personnel, equipment and support from the White Oak Detachment, Silver Spring, MD to Indian Head Division, Indian Head MD. To do so, critical functions include the ability to examine controlled experiments involving energetic and explosive materials. Upon analyzing the applicable existing capacities at White Oak, a Base Facility Requirement (BFR) was developed reflecting programmatic needs. Further analysis indicated it would be prudent to scale back the new facilities at Indian Head with respect to the existing facilities at White Oak based upon mission, efficiencies, and minimal growth capacity.

3. The primary construction required is the explosive test facility supported by the Indian Head BFR. Although the capacity of two chambers increased to ten pounds from the five pounds existent at White Oak, current projected mission requirements, nature of the state-of-the-art explosives being tested, and the efficiencies resulting from decreased usage of the large fifty pound chamber, dictate the need for the ten pounds capacity. Although the quantity of explosive charge has doubled, the size of the explosive chamber has not increased.

4. As a result of the BRAC MILCON process, the initial DD Form 1391 of 30 June 1993 was completed more quickly than the normal MILCON process. Subsequently, upon further examination of

## Department of the Navy Comments

Subj: RESPONSE TO DEPARTMENT OF DEFENSE INSPECTOR GENERAL  
(DODIG) AUDIT 5CG-5017.23

the requirements, the DD 1391 was revised. The current DD 1391 is dated 25 August 1994.

5. The underlying basis for differences in the amount of square footage allowed for RDT&E facilities is in the definitions and interpretation of what is stated in NAVFAC P-80, Facility Planning Criteria for Navy and Marine Corps Shore Installations which contains specific guidance concerning Research, Development, Test And Evaluation Facilities, in Section 3. There are several specific issues addressed herein:

a. "Research support" and "research office" are treated like as stated on page 300-3, P-80.

b. Machine shop areas used to machine explosives or fabricate fixtures are not support structures or facilities and are not synonymous with "machinery spaces" which are for valves, pipes, heating, A/C, etc. used for building support.

c. "Preparatory Spaces" as identified are not "Research Support" spaces and should not be included within the net-to-gross factor. They are accurately categorized as "One-of-a-Kind Facilities" or at least as "Bench-type Labs" as shown by example of a darkroom or control room at the bottom of page 300-3, P80.

d. P-80 allows for "One-of-a-Kind Facilities" in para. C, page 300-5. "Explosive Test Chambers" and "Preparatory Spaces" should be considered one-of-a-kind. A factor of 2.2 net-to-gross is utilized for special facilities, vice 1.65, thereby increasing the square footage used in calculations in Enclosure (1).

6. Request the DODIG Draft Audit Report be amended to support \$10.3 Million for the military construction project P-146T in accordance with the revised BFR and DD 1391.



DR. IRA M. BLATSTEIN  
Technical Director



DEPARTMENT OF THE NAVY  
INDIAN HEAD DIVISION  
NAVAL SURFACE WARFARE CENTER  
101 STRAUSS AVE  
INDIAN HEAD MD 20640-5035

11000  
Ser 092/150  
28 Jun 95

From: Commander, Indian Head Division, Naval Surface Warfare Center  
To: Commander, Naval Surface Warfare Center (Code 04), 2521 Jefferson Davis Highway, National Center #3, Arlington, VA 20382-5160

Subj: RESPONSE TO DEPARTMENT OF DEFENSE INSPECTOR GENERAL  
(DODIG) AUDIT NO. 5CG-5017.23

Ref: (a) DODIG Draft Audit Report no. 5CG-5017.23 of 31 May 95  
(b) NAVFAC P-80, Facility Planning Criteria for Navy and Marine Corps Shore Installations

End: (1) Response to DODIG Recommendations 3.a through 3.c  
(2) Relocation Basic Facility Requirements (R-BFR) of Jun 95 (Rev)

1. Enclosure (1) is our response to reference (a) recommendations for Indian Head Division, Naval Surface Warfare Center (IHDIVNAVSURFWARCN) that resulted from the Department of Defense Inspector General (DODIG) audit. In order to properly address the DODIG audit's recommendations, enclosure (2) was prepared. Enclosure (2) is a detailed Relocation Basic Facility Requirements (BFR) that addresses the real property requirements for an explosive test facility. The "Relocation BFR" is the amount of space required to duplicate the White Oak facilities after applying reference (b) criteria, Explosive Safety criteria, Navy Occupational Safety and Health (NAVOSH) criteria, and other as explained in enclosure (2).

2. A "Summary Realignment BFR" is shown on pages 6-1-2 and 6-1-3 of enclosure (2). This chart is summarized in *gross square feet* (GSF) as follows.

Facility	Relocation BFR	Existing at White Oak	DODIG Est Reqmnt.	P-146T Design
Totals	45,352	44,171	15,950	24,730

3. Enclosure (2) report shows that the requirements of BRAC MILCON Project P-146T are valid and justified at a minimum at the present scope of 24,730 GSF and cost of \$10.3 million. The report shows that:

a. The "Net" space of 23,070 SF currently utilized at White Oak to perform explosive test functions is almost *equal* to the "Gross" space of 24,730 SF being provided by the P-146T project.

b. Project P-146T is providing 2,204 GSF *less* administrative space than the existing administrative space at White Oak.



## Department of the Navy Comments

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Subj: RESPONSE TO DEPARTMENT OF DEFENSE INSPECTOR GENERAL  
(DODIG) AUDIT NO. 5CG-5017.23

c. Project P-146T is providing 45% less space than the relocation BFR and the existing space at White Oak.

d. Project P-146T is providing fewer bombproof facilities than those currently operational at White Oak; (approximately 9,500 GSF reduction in working facilities).

e. The new design for P-146T is more efficient than the existing space at White Oak; therefore, functions could be performed in less space.

4. DODIG recommendations 3.a and 3.b have been or will be fully satisfied. Based on enclosure (2) analyses, we disagree with the DODIG recommendation 3.c. The latest DD Form 1391 scope for Project P-146T complies with the spirit and letter of Public Law 101-510 including the Naval Facilities Engineering Command requirement that "Navy BRAC MILCON project requirements be limited to the lesser of the realigning organization's facility requirements or the space occupied at the losing installation." The current project scope is considerably lower than the relocation BFR and the space occupied at the losing installation.

5. Our point of contact is Mr. Carlos G. Elias. He can be reached on DSN 354-4402 or Commercial (301) 743-4402.

  
ROGER M. SMITH  
By direction

Copy to: (w/o encl 2)  
NAVSURFWARCEN (Code 04E)  
NAVSEASYS COM (SEA 0711)  
EFACHES (Codes 20, 20A0, 04, 4025)  
NAVFACENGCOM (Code 30)

**RESPONSE TO THE DRAFT AUDIT REPORT RECOMMENDATIONS  
PERTAINING TO NSWC, INDIAN HEAD DIVISION:**

**A. "Recommendation 3.a: Update DD Form 1391 with the correct category code, "316-10", for project P-146T, "Explosive Test Facility Complex".**

Renumbered  
as  
Recommendation 3.d.

**Indian Head Division, NSWC Response: Concur.**

The DD Form 1391 will be revised to reflect the category code 316-10.

**B. "Recommendation 3.b: Conduct an economic analysis of Indian Head Division's administrative space and evaluate possible alternatives to new construction for the portion of project P-146T, "Explosive Test Facility Complex", relating to administrative space requirements."**

Renumbered  
as  
Recommendation 3.e.

**Indian Head Division, NSWC Response: Concur.**

An economic analysis has been prepared and is included in Section 5 of the Relocation BFR, enclosure ( 2 ). The economic analysis satisfies this recommendation.

**C. "Recommendation 3.c: Revise and resubmit the FY 1996 DD Form 1391 with adequate supporting documentation for project P-146T, "Explosive Test Facility Complex," that supports space requirements and budget estimates and reflects the budget reduction in Recommendation 1.b.**

Revised and  
Renumbered  
as  
Recommendations 3.a.,  
3.b., and  
3.c.

**Indian Head Division, NSWC Response: Do Not Concur.**

The following is a detailed explanation on reasons for non-concurrence.

**C.1 DODIG Statement: (page 8 of Draft Audit Report): "Result of Non-BRAC MILCON Requirements Reviewed. Based on interviews of personnel from NSWC, White Oak, NSWC, Indian Head, CHESDIV, and NAVFAC and by reviewing reconstructed facility planning documents, the original DD Form 1391 most closely represents the actual space requirements necessary for the proposed Explosive Test Facility Complex. As discussed, Navy BRAC MILCON project requirements are limited to the lesser of the realigning organization's facility requirements or the space occupied at the losing installation. BRAC MILCON funds may not be used to fund an organization's current deficiencies if the deficiencies are not a result of BRAC actions. The 16,350 square feet in the DD Form 1391, dated April 25, 1994, presented to the Office of the Secretary of Defense by NAVCOMPT is less than the 24,730 square feet proposed on the revised DD Form 1391, dated August 25, 1994. We concluded that approximately \$2.6**

million of the total \$10.3 million included requirements that were not attributable to realignment actions and the resubmitted DD Form 1391 should be reduced by approximately \$2.6 million. Details of the requirements that were not attributable to realignment actions are discussed below and are in Appendix E".

C.1.1 "...the original DD Form 1391 most closely represents the actual space requirements necessary for the proposed Explosive Test Facility Complex."

**Indian Head Division, NSWC Response:** *Do Not Concur*

The original DD Form 1391 was based on incomplete and inaccurate data and did not reflect all the White Oak's existing facilities and spaces used for the explosive research functions that will be carried out in P-146T. In order to properly assess the existing spaces at White Oak, the NSWC Indian Head Division hired the services of an Architect/Engineer (A/E) firm to conduct a field investigation and develop a Relocation Basic Facility Requirements (BFR). The Relocation BFR developed by the A/E, see enclosure ( 2 ), defines all the existing spaces at White Oak that relate to the explosive research functions that will be carried out in P-146T. The existing spaces were "field measured" by the A/E and the results documented on the Relocation BFR. The field measurements of the existing spaces at White Oak reveal that the original DD Form 1391 cannot be used as a reliable source for determining actual space requirements. The original DD Form 1391 was prepared in a short timeframe dictated by the BRAC process. The original DD Form 1391 scope does not provide an adequate complete and usable facility and the work capacity equal to the replacement facilities. The original DD Form 1391 scope failed to include numerous facilities and support spaces that are part of the main laboratories. The original DD Form 1391 scope did not account for adequate storage for expendable materials, test supplies, and test results samples; failed to adjust space requirements for special requirements by OSHA and ADA; failed to include changes to existing space configurations due to lack of functional layouts; and did not include the required spaces for field offices, machine shops, storage, mechanical rooms, and proper circulation. Therefore, the actual field measurements of existing spaces shown on enclosure ( 2 ) should be used as the basis to define the "true" spaces presently occupied at White Oak.

C.1.2 "..., Navy BRAC MILCON project requirements are limited to the lesser of the realigning organization's facility requirements or the space occupied at the losing installation."

**Indian Head Division, NSWC Response:** *Concur*

The latest DD Form 1391 scope for MILCON Project P-146T complies with the spirit and the letter of Public Law 101-510 including NAVFAC's requirement that "Navy BRAC MILCON project requirements be limited to the lesser of the realigning organization's facility requirements or the space occupied at the losing installation." The current project scope of 24,730 gross square feet is considerably lower than the

Relocation Basic Facility Requirements ( 45,352 gross sf) and the space occupied at the losing installation ( 44,171 gross sf). The DD Form 1391 dated August 25, 1994, requirement for less space is attributed to the following factors: (a) the new design allows for greater efficiencies and reduces existing wasted space; (b) the existing facilities at White Oak were built at different periods, evolved over time and are not as efficient as a new design; (c) various existing facilities will not be duplicated since the proposed project's efficient design allows for better utilization and workload coordination; and (d) consolidation of functions into a single structure provided better utilization of spaces.

C.1.3 "The 16,350 square feet in the DD Form 1391, dated April 25, 1994, presented to the Office of the Secretary of Defense by NAVCOMPT is less than the 24,730 square feet proposed on the revised DD Form 1391, dated August 25, 1994."

**Indian Head Division, NSWC Response:**

The April 25, 1994 DD Form 1391 understated the requirements and does not represent the BFR. The August 25, 1994 DD Form 1391 reflects only requirements to be met by the BRAC MILCON funds. The original DD Form 1391 does not provide an adequate complete and usable facility to provide work capacity equal to the existing White Oak facilities. The August 25, 1994, DD Form 1391 was developed after more study and it provides a complete and usable facility with the same capacity existing at White Oak. The increase in space from the original DD Form 1391 was necessary to satisfy the requirements. Even though the latest DD Form 1391 reflects a higher scope when compared to the original DD Form 1391, it is still significantly lower than the existing space at White Oak.

C.2 DODIG Statement; (page 8 of Draft Audit Report): "50 Pound Bomb-proof Chamber. The estimate cost of the 50-pound bomb-proof chamber should be reduced by approximately \$210,000 (700 square feet X \$300 per square foot). Navy planning officials' decision to increase space requirements for the 50-pound bomb-proof chamber was not attributable to realignment actions. Our estimated facility requirements were based on the original DD Form 1391 requirements. Therefore, the 50-pound laboratory should be no larger than 5,130 square feet instead of 5,830 square feet."

**Indian Head Division, NSWC Response:** *Do Not Concur.*

	<b><u>Relocation BFR</u></b>	<b><u>Existing @ White Oak</u></b>	<b><u>DD Form 1391 Aug 25, 1994</u></b>
<b>Totals:</b>	<b>10,409 GSF</b>	<b>13,972 GSF</b>	<b>5,830 GSF</b>

As indicated above and as shown on page 6-1-2 of the Relocation BFR, the requirement of the 50-pound Bombproof Chamber is 10,409 gross square feet. Actual field measurement of existing space associated with the 50-pound bombproof chamber is 13,972 gross square feet. The DD Form 1391 dated August 25, 1994, shows a

requirement of 5,830 gross square feet. The original DD Form 1391 understated the total facility requirement. The August 25, 1994 DD Form 1391 reflects only requirement to be met by the BRAC MILCON funds. The less space shown on the DD Form 1391 dated August 25, 1994 than the relocation BFR and existing facility at White Oak, is due to the new design and a more efficient layout.

**C.3 DODIG Statement: (page 8 of Draft Audit Report) "Thermal Studies Laboratory.** The estimate cost of the thermal studies laboratory should be reduced by approximately \$147,000 (490 square feet X \$300 per square foot). Similarly, increased space requirements for the thermal studies laboratory was not attributable to realignment actions. Based on original DD Form 1391 requirements, the thermal studies laboratory should be no larger than 1,080 square feet instead of 1,570 square feet."

**Indian Head Division, NSWC Response:** *Do Not Concur.*

	<u>Relocation BFR</u>	<u>Existing @ White Oak</u>	<u>DD Form 1391 Aug 25, 1994</u>
Totals:	4,380 GSF	3,568 GSF	1,570 GSF

As indicated above and as shown on page 6-1-2 of the Relocation BFR, the requirement for the Thermal Studies Laboratory is 4,380 gross square feet. Actual field measurement of existing space associated with the thermal studies laboratory is 3,568 gross square feet. The DD Form 1391 dated August 25, 1994, shows a requirement of 1,570 gross square feet. The original DD Form 1391 understated the total facility requirement. The August 25, 1994 DD Form 1391 reflects only requirement to be met by the BRAC MILCON funds. The less space shown on the DD Form 1391 dated August 25, 1994 than the relocation BFR and existing facility at White Oak, is due to the following factors: (a) the new design allows for greater efficiencies and reduces existing wasted space; (b) the existing facilities at White Oak were built at different periods, evolved over time and are not as efficient as a new design; (c) various existing facilities will not be duplicated since the proposed project's efficient design allows for better utilization and workload coordination; and (d) consolidation of functions into a single structure provided better utilization of spaces.

**C.4 DODIG Statement: (page 8 of Draft Audit Report) "Shock Physics Laboratory.** The estimated cost of the shock physics laboratory should be reduced by approximately \$411,000 (1,370 square feet X \$300 per square foot), based on original DD Form 1391 requirements. The decision to increase explosive limits for the shock physics laboratory from 5 pounds to 10 pounds was not attributable to realignment actions. Current explosive limits for the existing comparable bomb proof chamber at the losing installation were 5 pounds. Based on original DD Form 1391 requirements, the shock physics laboratory should be no larger than 1,080 square feet instead of 1,370 square feet."

**Indian Head Division, NSWC Response: Do Not Concur.**

	<b><u>Relocation BFR</u></b>	<b><u>Existing @ White Oak</u></b>	<b><u>DD Form 1391 Aug 25, 1994</u></b>
<b>Totals:</b>	<b>6,629 GSF</b>	<b>5,954 GSF</b>	<b>2,450 GSF</b>

As indicated above and as shown on page 6-1-2 of the Relocation BFR, the requirement for the Shock Physics Laboratory is 6,629 gross square feet. Actual field measurement of existing space associated with the shock physics laboratory is 5,954 gross square feet. The DD Form 1391 dated August 25, 1994, shows a requirement of 2,450 gross square feet. The original DD Form 1391 understated the total facility requirement. The August 25, 1994 DD Form 1391 reflects only requirement to be met by the BRAC MILCON funds.

The less space shown on the DD Form 1391 dated August 25, 1994 than the relocation BFR and existing facility at White Oak, is due to the following factors: (a) the new design allows for greater efficiencies and reduces existing wasted space; (b) the existing facilities at White Oak were built at different periods, evolved over time and are not as efficient as a new design; (c) various existing facilities will not be duplicated since the proposed project's efficient design allows for better utilization and workload coordination; and (d) consolidation of functions into a single structure provided better utilization of spaces.

A total of five bombproof facilities are proposed under project P-146T. Of those, only two bombproof chambers are being increased to accommodate an explosive limit of 10 pounds versus the 5 pounds presently operated at White Oak (Shock Physics Laboratory and Detonation Physics Laboratory). Even though there are no 10 pound bombproof chambers at White Oak, 10 pound tests are required and are presently conducted at the 50 pound bombproof chamber. Building this 10 pound bombproof chamber will be required to support current operational requirements. The only significant difference between a 5 pound and a 10 pound bombproof facility is the wall thickness surrounding the actual chamber. The internal footprint remains the same regardless of whether it is a 5 pound or a 10 pound bombproof. Design estimates indicate that the increase in wall thickness has a minimum cost impact.

**C.5 DODIG Statement: (pages 8 and 9 of Draft Audit Report) "Detonation Physics Laboratory.** Similarly, the estimate cost of the detonation physics laboratory should be reduced by approximately \$411,000 (1,370 square feet X \$300 per square foot). The decision to increase explosive limits for the detonation physics laboratory from 5 pounds to 10 pounds was not attributable to realignment actions. Current explosive limits for the existing comparable bomb proof chamber at the losing installation were 5 pounds. Based on original DD Form 1391 requirements, the detonation physics laboratory should be no larger than 1,080 square feet instead of 1,370 square feet."

**Indian Head Division, NSWC Response: Do Not Concur.**

	<b><u>Relocation BFR</u></b>	<b><u>Existing @ White Oak</u></b>	<b><u>DD Form 1391 Aug 25, 1994</u></b>
<b>Totals:</b>	<b>6,448 GSF</b>	<b>4,807 GSF</b>	<b>2,450 GSF</b>

As indicated above and as shown on page 6-1-2 of the Relocation BFR, the requirement for the Detonation Physics Laboratory is 6,448 gross square feet. Actual field measurement of existing space associated with the detonation physics laboratory is 4,807 gross square feet. The DD Form 1391 dated August 25, 1994, shows a requirement of 2,450 gross square feet. The original DD Form 1391 understated total facility requirement. The August 25, 1994 DD Form 1391 reflects only requirement to be met by the BRAC MILCON funds. The space shown on the DD Form 1391 dated August 25, 1994 is less than the relocation BFR and existing facility at White Oak, is due to the following factors: (a) the new design allows for greater efficiencies and reduces existing wasted space; (b) the existing facilities at White Oak were built at different periods, evolved over time and are not as efficient as a new design; (c) various existing facilities will not be duplicated since the proposed project's efficient design allows for better utilization and workload coordination; and (d) consolidation of functions into a single structure provided better utilization of spaces.

A total of five bombproof facilities are proposed under project P-146T. Of those, only two bombproof chambers are being increased to handle an explosive limit of 10 pounds versus the 5 pounds presently operated at White Oak (Shock Physics Laboratory and Detonation Physics Laboratory). Even though there are no 10 pound bombproof chambers at White Oak, 10 pound tests are required and are presently conducted at the 50 pound bombproof chamber. Building this 10 pound bombproof chamber will be required to support current operational requirements. The only significant difference between a 5 pound and a 10 pound bombproof facility is the wall thickness surrounding the actual chamber. The internal footprint remains the same regardless of whether it is a 5 pound or a 10 pound bombproof. Design estimates indicate that the increase in wall thickness has a minimum cost impact.

**C.6 DODIG Statement: (page 9 of Draft Audit Report) "Gun Facility Laboratory.** The estimate cost of the gun facility laboratory should be reduced by approximately \$1,083,000 (3,600 square feet X \$300 per square foot). Increased space requirements related to enclosing the gun facility's laboratory's test equipment were not attributable to realignment actions. Gun test equipment at NSWC, White Oak, the losing installation, was not enclosed. Consequently, BRAC MILCON funds may not be used to fund enclosure of the gun facility laboratory's test equipment. Therefore, the gun facility laboratory should be no larger than 1,180 square feet instead of 4,790 square feet, based on original DD Form 1391 requirements."

Indian Head Division, NSWC Response: Do Not Concur.

	<u>Relocation BFR</u>	<u>Existing @ White Oak</u>	<u>DD Form 1391 Aug 25, 1994</u>
Totals:	5,443 GSF	6,062 GSF	4,790 GSF

As indicated above and as shown on page 6-1-2 of the Relocation BFR, the requirement for the Gun Facility Laboratory is 5,443 gross square feet. Actual field measurement of existing space associated with the gun facility laboratory is 6,062 gross square feet. The DD Form 1391 dated August 25, 1994, shows a requirement of 4,790 gross square feet. The original DD Form 1391 understated the total facility requirement. The August 25, 1994 DD Form 1391 reflects only requirement to be met by the BRAC MILCON funds. The less space shown on the DD Form 1391 dated August 25, 1994 than the relocation BFR and existing facility at White Oak, is due to the following factors: (a) the new design allows for greater efficiencies and reduces existing wasted space; (b) the existing facilities at White Oak were built at different periods, evolved over time and are not as efficient as a new design; (c) various existing facilities will not be duplicated since the proposed project's efficient design allows for better utilization and workload coordination; and (d) consolidation of functions into a single structure provided better utilization of spaces.

Part of the gun test equipment at White Oak is housed in a covered and open-sided unheated structure. This space should be counted as part of the requirements per NAVFAC P-80 guidance found on page 610-1.0. Only half of the existing covered and open-sided unheated structure was included.

The Gun Facility Laboratory combines guns from the existing 50 pound bombproof chamber and a 5 pound bombproof chamber to create a gun facility. The gun located at the 50 pound bombproof chamber is enclosed. The gun in question at the existing 5 pound bombproof chamber is covered in an open-sided unheated structure. Because of the length of other guns, there is room to install the one gun from the 5 pound bombproof chamber in the new gun facility laboratory, and common control will be used. This was done for cost reasons. The gun muzzle is required to enter the blast chamber. It is not practical to have one part of the new gun facility uncovered so close to the chamber. The gun of the 5 pound bombproof chamber requires a special foundation. This foundation is part of the new gun facility laboratory.

There are some difficulties with the current open-sided cover. Part of the gun is exposed to moisture and several electro-pneumatic valves have been damaged by rust. In addition, the gun is currently exposed to ice and snow in the winter. Because the ice is located near the gun breech, this means that gun operations cannot be performed until the ice is cleared. Operations during a heavy rain are also difficult. The gun breech requires the loading of a shell incorporating gun powder into the gun breech. The gun can also be



damaged by operations involving the landscaping crew. Occasionally, rocks are thrown by grass cutting operations. The gun needs to be cleaned with certain solvents. Currently, any solvent spilled would go into the soil.

**C.7 DODIG Statement:** (page 9 of Draft Audit Report) "Administration and Support Building. The estimate cost of the administration and support building should be reduced by approximately \$372,000 (1,240 square feet X \$300 per square foot). The decision to increase administrative space requirements relating to the transfer of 21 explosive research personnel was also not attributable to realignment actions. Based on our review of the original DD Form 1391 requirements, the administration and support building should be no larger than 6,400 square feet instead of 7,640 square feet."

**Indian Head Division, NSWC Response:** *Do Not Concur.*

	<u>Relocation BFR</u>	<u>Existing @ White Oak</u>	<u>DD Form 1391 Aug 25, 1994</u>
Totals:	12,043 GSF	9,844 GSF	7,640 GSF

As indicated above and as shown on page 6-1-2 of the Relocation BFR, the requirement for the Administration Facility is 12,043 gross square feet. Actual field measurement of existing space associated with the administration and support building, housing 21 people, is 9,844 gross square feet. The DD Form 1391 dated August 25, 1994, shows a requirement of 7,640 gross square feet. The original DD Form 1391 understated the total facility requirement. The August 25, 1994 DD Form 1391 reflects only requirement to be met by the BRAC MILCON funds. The less space shown on the DD Form 1391 dated August 25, 1994 than the relocation BFR and existing facility at White Oak, is due to the new design and a more efficient layout.

The actual field measurement of 9,844 gross square feet reflects that administrative space was not increased.



DEPARTMENT OF THE NAVY  
ENGINEERING FIELD ACTIVITY CHESAPEAKE  
WASHINGTON NAVY YARD BUILDING 212  
901 M STREET SE  
WASHINGTON DC 20374-5018

IN REPLY REFER TO

JUN 29 1995

11019  
20A/LAG

From: Commanding Officer, Engineering Field Activity, Chesapeake, (Code 20A), Building 212,  
Washington Navy Yard, 901 M Street, SE, Washington, D.C. 20374-5018

To: Inspector General, Department of Defense, 400 Army Navy Drive, Arlington, VA 22202-  
2884

Subj: RESPONSE TO DEPARTMENT OF DEFENSE INSPECTOR GENERAL (DODIG)  
AUDIT NO. 5CG-5017.23

1. We strongly support BRAC MILCON P-146T at the current scope of 24,830 sf. This command has reviewed the results of the Relocation BFR prepared in response to the subject audit which clearly showed that the requirements for P-146T are valid.

2. An independent contractor produced the relocation BFR through a process of field measurement and documentation. This BFR has given us set of requirements that more accurately reflects the facility that will be necessary to successfully accomplish the mission at Indian Head.

3. In response to Recommendation 2, we have met with relevant staff and briefed them on the need to adhere to NAVFAC guidance on review and certification of DD Forms 1391 as it applies to BRAC MILCON projects, also.

4. Our point of contact is Mr. Bob Schwarz. He can be reached on commercial (202) 685-3057.

Sincerely,

A handwritten signature in cursive script, reading "William D. Faught", is written above the typed name.

William D. Faught  
Director  
Installations Planning Division  
By Direction

## **Audit Team Members**

This report was prepared by the Acquisition Management Directorate, Office of the Assistant Inspector General for Auditing, Department of Defense.

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